

## Claims

What is claimed is:

1. A transportation management system comprising:
  - a. a site controller located at each of at least two remote sites, the site controller authorizing site access and recording site transaction data;
  - b. a central controller in communication with the site controllers, the central controller receiving site transaction data from the site controllers and transmitting operating information and site access authorization data to the site controllers; and
  - c. at least one identification device that interacts with the site controllers, the identification device identifying a transporting entity desiring access to a respective site, the respective site controller authorizing site access to the transporting entity upon verification of pre-determined credentials and recording site transaction data.
2. The transportation management system of claim 1, wherein the site transaction data involves the transportation of waste.
3. The transportation management system of claim 2, wherein the remote site is a transfer station or a landfill.
4. The transportation management system of claim 3, wherein the site controller communicates with at least one weigh scale at the transfer station or the landfill.
5. The transportation management system of claim 4, wherein the site transaction data recorded includes vehicle weight.
6. The transportation management system of claim 1, wherein the site transaction data includes site inbound data and site outbound data.
7. The transportation management system of claim 6, wherein the site inbound data includes driver data and trailer identification.

8. The transportation management system of claim 7, wherein the driver data includes driver's license data, physical examination data and insurance data.

9. The transportation management system of claim 6, wherein the site inbound data includes driver data, date and time, gross vehicle weight, trailer identification, site identification, destination identification, transaction type and trip identification.

10. The transportation management system of claim 6, wherein the site outbound data includes driver data, date and time, gross vehicle weight, tare weight, net weight, site identification, destination identification, transaction type and trip identification.

11. The transportation management system of claim 1, wherein the identification device is a card having a read/write memory chip.

12. The transportation management system of claim 11, wherein the central controller includes an encoder that writes data to, and reads data from, the memory chip.

13. The transportation management system of claim 11, wherein the card is encoded as a driver card or a site manager card.

14. The transportation management system of claim 13, wherein the driver card includes driver employment information, state driver's license information and medical information.

15. The transportation management system of claim 13, wherein the site manager card permits a site manager to override pre-determined requirements for site access.

16. The transportation management system of claim 13, wherein the site manager card permits a site manager to override pre-determined transaction limitations.

17. The transportation management system of claim 13, wherein the site manager card permits a site manager to manually record site transaction data.

18. The transportation management system of claim 1, wherein the transporting entity is a sub-contract hauler represented by a driver operating a vehicle having a trailer.

19. The transportation management system of claim 18, wherein the operating information transmitted by the central controller to the site controller includes hauler data, driver data and trailer data.

20. The transportation management system of claim 19, wherein the hauler data includes organization contact information, contract information and insurance information.

21. The transportation management system of claim 19, wherein the driver data includes employment information, state driver's license information and medical information.

22. The transportation management system of claim 19, wherein the trailer data includes identification information, owner information, state registration and inspection information.

23. The transportation management system of claim 1, wherein the operating information transmitted from the central controller to the site controllers includes upcoming transporting entity credential expirations for notification to a subject transporting entity by a respective site controller during a next, subsequent site access authorization.

24. The transportation management system of claim 1, wherein the central controller generates an exception report.

25. The transportation management system of claim 1, wherein the central controller generates a transaction report.

26. A waste management system comprising:

a. a site controller located at each of at least one transfer station and at least one landfill, the site controller authorizing site access to the transfer station and the landfill;

b. a central controller in communication with the site controllers, the central controller transmitting operating information and site access authorization data to the site controllers; and

c. an identification device used by each transporting entity desiring access to the transfer site and landfill, the identification device containing transporting entity characteristics and interacting with the site controllers, the site controllers authorizing site access to the transporting entity upon verification of pre-determined transporting entity characteristics using operating information and site access authorization data transmitted from the central controller.

27. A waste management system comprising:

a. a site controller located at each of at least one transfer station and at least one landfill, the site controller authorizing site access and recording site transaction data at the transfer station and the landfill;

b. a central controller in communication with the site controllers, the central controller receiving site transaction data from the site controllers and transmitting operating information and site access authorization data to the site controllers; and

c. an identification device used by each transporting entity desiring access to the transfer station and landfill, the identification device containing transporting entity characteristics and interacting with the site controllers, the site controllers authorizing site access to the transporting entity upon verification of pre-determined transporting entity characteristics using operating information and site access authorization data transmitted

from the central controller, the site controllers writing the site transaction data to the identification device.

28. A waste management system comprising:

a. a site controller located at each multiple transfer stations and landfills, the site controller electronically authorizing site access and recording site transaction data at the transfer stations and the landfills;

b. a central controller in communication with the site controllers, the central controller electronically receiving site transaction data from the site controllers and transmitting operating information and site access authorization data to the site controllers; and

c. an identification card having a memory chip, the identification card used by each transporting entity desiring access to a respective transfer station or landfill, the memory chip retaining transporting entity characteristics and electronically interacting with the site controllers, the site controllers electronically authorizing site access to the transporting entity upon verification of pre-determined transporting entity characteristics using operating information and site access authorization data transmitted from the central controller, the site controllers writing the site transaction data to the memory chip.

29. A method for controlling access to sites of a transportation network, comprising the steps of:

a. verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. recording pre-determined first remote site transaction data; and

c. verifying pre-determined characteristics of the transporting entity and certain pre-determined first remote site transaction data at a second remote site, a positive verification providing the transporting entity access to the second remote site.

30. A method for managing and monitoring a transportation network, comprising the steps of:

a. verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. recording pre-determined first remote site transaction data;

c. verifying pre-determined characteristics of the transporting entity at a second remote site, a positive verification providing the transporting entity access to the second remote site;

d. recording pre-determined second remote site transaction data; and

e. evaluating the first remote site transaction data with the second remote site transaction data creating statistics used to manage and monitor the transportation network.

31. The method of claim 30, wherein the transportation network is a waste hauling network.

32. The method of claim 31, wherein the first remote site is a transfer station and the second remote site is a landfill.

33. The method of claim 32, wherein multiple transfer stations and multiple landfills exist in the waste hauling network.

34. The method of claim 30, wherein the pre-determined characteristics of the transporting entity at the first remote site, the pre-determined characteristics of the

transporting entity at the second remote site, the first remote site transaction data and the second remote site transaction data are transmitted to a central controller at a central managing location, whereby the managing and monitoring of the transportation network occurs by using the central controller at the central managing location.

35. The method of claim 30, wherein certain pre-determined characteristics of the transporting entity are verified through communication between an identification device carried by the transporting entity, the identification device possessing the certain pre-determined characteristics of the transporting entity and a site controller located at the respective first or second remote site.

36. The method of claim 35, wherein the site controller evaluates the certain pre-determined characteristics of the transporting entity and determines whether the transporting entity can access the respective first or second remote site.

37. The method of claim 36, wherein a central controller maintains a database of current and pertinent transporting entity characteristics and maintains criteria for use by the site controller to evaluate the certain pre-determined characteristics of the transporting entity and determine whether the transporting entity can access the respective first or second remote site, the central controller periodically communicating the database to the site controller.

38. The method of claim 35, wherein the identification device is a card including a read/write memory chip.

39. The method of claim 38, wherein the card is encoded with transporting entity data by a central controller located at a central managing location.

40. The method of claim 38, wherein the card is encoded with the first remote site transaction data by the site controller at the first remote site.

41. The method of claim 40, wherein the pre-determined characteristics of the transporting entity at a second remote site includes transporting entity data encoded to the card by a central controller located at a central managing location and the first remote site transaction data encoded to the card by the site controller at the first remote site.

42. The method of claim 41, wherein positive verification providing the transporting entity access to the second remote site requires that the transporting entity data and the first remote site transaction data comply with certain pre-determined requirements.

43. The method of claim 30, wherein the first and the second remote site transaction data includes vehicle weight.

44. The method of claim 30, wherein the first site transaction data includes first site inbound data and first site outbound data.

45. The method of claim 44, wherein the first site inbound data includes driver data, date and time, gross vehicle weight, trailer identification, first remote site identification, transaction type and trip identification.

46. The method of claim 44, wherein the first site outbound data includes driver data, date and time, gross vehicle weight, tare weight, net weight, first remote site identification, destination identification, transaction type and trip identification.

47. The method of claim 30, wherein the second site transaction data includes second site inbound data.

48. The method of claim 47, wherein the second site inbound data includes driver data, date and time, gross vehicle weight, trailer identification, first remote site identification, destination identification, transaction type and trip identification.

49. The method of claim 30, wherein the transportation entity is a third-party hauler represented by a driver operating a vehicle having a trailer.



50. The method of claim 49, wherein certain pre-determined characteristics of the hauler at the first remote site and the second remote site includes hauler data, driver data and trailer data.

51. The method of claim 50, wherein the hauler data includes transportation entity contact information, contract information, and insurance information.

52. The method of claim 51, wherein positive verification providing the hauler access to the first remote site and the second remote site requires that the hauler data comply with certain pre-determined requirements.

53. The method of claim 50, wherein the driver data includes employment information, state driver's license information, and medical information.

54. The method of claim 53, wherein positive verification providing the driver access to the first remote site and the second remote site requires that the driver data comply with certain pre-determined requirements.

55. The method of claim 50, wherein the trailer data includes identification information, owner information, state registration and inspection information.

56. The method of claim 55, wherein positive verification providing the hauler access to the first remote site and the second remote site requires that the trailer data comply with certain pre-determined requirements.

57. The method of claim 30, wherein one pre-determined characteristic of the transporting entity at the second remote site is a vehicle weight not exceeding a pre-determined limit, the pre-determined limit equaling a vehicle weight recorded as part of the first remote site transaction data plus a differential, whereby a transporting entity at the second remote site having a vehicle weight exceeding the pre-determined limit is denied access to the second remote site.

58. The method of claim 57, wherein the differential is 2500 pounds.

59. The method of claim 30, wherein one pre-determined characteristic of the transporting entity at the second remote site is a destination identification assigned as part of the first remote site transaction data matching the destination identification of the respective second remote site, whereby a transporting entity at the second remote site having a destination identification assigned as part of the first remote site transaction data differing from the destination identification of the respective second remote site is denied access to the second remote site.

60. The method of claim 30, wherein one pre-determined characteristic of the transporting entity at the second remote site is a trailer identification recorded as part of the first remote site transaction data matching the trailer identification of the trailer delivered to the second remote site, whereby a transporting entity at the second remote site having a trailer identification recorded as part of the first remote site transaction data differing from the trailer identification of the trailer delivered to the second remote site is denied access to the second remote site.

61. The method of claim 30, wherein the statistics created to manage and monitor the transportation network include an exception report listing all uncompleted trips, and uncompleted trip defined as first remote site transaction data recorded without a subsequent second remote site transaction data.

62. The method of claim 30, wherein the statistics created to manage and monitor the transportation network include an exception report listing trips with trailer weight gains exceeding pre-determined limits.

63. The method of claim 30, wherein the statistics created to manage and monitor the transportation network include an exception report listing site authorizations by a site manager.

64. The method of claim 30, wherein the statistics created to manage and monitor the transportation network include a transaction report listing second remote site transaction data and first remote site transaction data comparing date and time of start and finish for an assigned haul route.

65. The method of claim 30, wherein the statistics created to manage and monitor the transportation network includes upcoming transporting entity credential expirations for notification to a subject transporting entity during a next, subsequent first or second remote site verification.

66. A method for managing and monitoring a transportation network, comprising the steps of:

- a. verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;
- b. recording pre-determined first remote site transaction data;
- c. verifying pre-determined characteristics of the transporting entity and certain pre-determined first remote site transaction data at a second remote site, a positive verification providing the transporting entity access to the second remote site;
- d. recording pre-determined second remote site transaction data; and
- e. evaluating the first remote site transaction data with the second remote site transaction data creating statistics used to manage and monitor the transportation network.

67. A method for managing waste transporting, comprising the steps of:

- a. verifying pre-determined characteristics of a transporting entity at a transfer station, a positive verification providing the transporting entity access to pick-up at the transfer station;
- b. recording pre-determined transfer station transaction data;
- c. verifying pre-determined characteristics of the transporting entity and certain pre-determined transfer station transaction data at a landfill, a positive verification providing the transporting entity access to deliver at the landfill;
- d. recording pre-determined landfill transaction data; and
- e. evaluating the transfer station transaction data with the landfill transaction data creating statistics used to manage and monitor waste transporting.

68. A method for managing waste transporting, comprising the steps of:

- a. verifying pre-determined characteristics of a hauler, driver and trailer at a transfer station, a positive verification providing the driver access to waste pick-up at the transfer station;
- b. recording pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up;
- c. verifying pre-determined characteristics of the hauler, driver, trailer, and certain pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up, at a landfill, a positive verification providing the driver access to deliver waste to the landfill;
- d. recording pre-determined landfill transaction data, including date and time of delivery, and weight gain during delivery; and

e. evaluating the transfer station transaction data with the landfill transaction data creating statistics used to manage and monitor waste transporting.

69. A method for managing waste transporting, comprising the steps of:

a. verifying pre-determined characteristics of a hauler, driver and trailer at a transfer station, a positive verification providing the driver access to waste pick-up at the transfer station;

b. recording pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up;

c. verifying pre-determined characteristics of the hauler, driver, trailer, and certain pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up, at a landfill, a positive verification providing the driver access to deliver waste to the landfill;

d. recording pre-determined landfill transaction data, including date and time of delivery, and weight gain during delivery; and

e. evaluating the transfer station transaction data with the landfill transaction data creating statistics, including exception reports, used to manage and monitor waste transporting.

70. A computer-readable medium that configures a computer system to perform a method, the method comprising the steps of:

a. verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. recording pre-determined first remote site transaction data; and

c. verifying pre-determined characteristics of the transporting entity and certain pre-determined first remote site transaction data at a second remote site, a positive verification providing the transporting entity access to the second remote site.

71. A computer-readable medium that configures a computer system to perform a method, the method comprising the steps of:

a. verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. recording pre-determined first remote site transaction data;

c. verifying pre-determined characteristics of the transporting entity at a second remote site, a positive verification providing the transporting entity access to the second remote site;

d. recording pre-determined second remote site transaction data; and

e. evaluating the first remote site transaction data with the second remote site transaction data creating statistics used to manage and monitor the transportation network.

72. A computer-readable medium that configures a computer system to perform a method, the method comprising the steps of:

a. verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. recording pre-determined first remote site transaction data;

c. verifying pre-determined characteristics of the transporting entity and certain pre-determined first remote site transaction data at a second remote site, a positive verification providing the transporting entity access to the second remote site;

d. recording pre-determined second remote site transaction data; and

e. evaluating the first remote site transaction data with the second remote site transaction data creating statistics used to manage and monitor the transportation network.

73. A computer-readable medium that configures a computer system to perform a method, the method comprising the steps of:

a. verifying pre-determined characteristics of a transporting entity at a transfer station, a positive verification providing the transporting entity access to pick-up at the transfer station;

b. recording pre-determined transfer station transaction data;

c. verifying pre-determined characteristics of the transporting entity and certain pre-determined transfer station transaction data at a landfill, a positive verification providing the transporting entity access to deliver at the landfill;

d. recording pre-determined landfill transaction data; and

e. evaluating the transfer station transaction data with the landfill transaction data creating statistics used to manage and monitor waste transporting.

74. A computer-readable medium that configures a computer system to perform a method, the method comprising the steps of:

a. verifying pre-determined characteristics of a hauler, driver and trailer at a transfer station, a positive verification providing the driver access to waste pick-up at the transfer station;

b. recording pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up;

c. verifying pre-determined characteristics of the hauler, driver, trailer, and certain pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up, at a landfill, a positive verification providing the driver access to deliver waste to the landfill;

d. recording pre-determined landfill transaction data, including date and time of delivery, and weight gain during delivery; and

e. evaluating the transfer station transaction data with the landfill transaction data creating statistics used to manage and monitor waste transporting.

75. A computer-readable medium that configures a computer system to perform a method, the method comprising the steps of:

a. verifying pre-determined characteristics of a hauler, driver and trailer at a transfer station, a positive verification providing the driver access to waste pick-up at the transfer station;

b. recording pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up;

c. verifying pre-determined characteristics of the hauler, driver, trailer, and certain pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up, at a landfill, a positive verification providing the driver access to deliver waste to the landfill;

d. recording pre-determined landfill transaction data, including date and time of delivery, and weight gain during delivery; and



e. evaluating the transfer station transaction data with the landfill transaction data creating statistics, including exception reports, used to manage and monitor waste transporting.

76. A computer-readable medium that that stores a program, the program comprising:

a. means for verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. means for recording pre-determined first remote site transaction data;  
and

c. means for verifying pre-determined characteristics of the transporting entity and certain pre-determined first remote site transaction data at a second remote site, a positive verification providing the transporting entity access to the second remote site.

77. A computer-readable medium that that stores a program, the program comprising:

a. means for verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. means for recording pre-determined first remote site transaction data;

c. means for verifying pre-determined characteristics of the transporting entity at a second remote site, a positive verification providing the transporting entity access to the second remote site;

d. means for recording pre-determined second remote site transaction data; and

e. means for evaluating the first remote site transaction data with the second remote site transaction data creating statistics used to manage and monitor the transportation network.

78. A computer-readable medium that that stores a program, the program comprising:

a. means for verifying pre-determined characteristics of a transporting entity at a first remote site, a positive verification providing the transporting entity access to the first remote site;

b. means for recording pre-determined first remote site transaction data;

c. means for verifying pre-determined characteristics of the transporting entity and certain pre-determined first remote site transaction data at a second remote site, a positive verification providing the transporting entity access to the second remote site;

d. means for recording pre-determined second remote site transaction data; and

e. means for evaluating the first remote site transaction data with the second remote site transaction data creating statistics used to manage and monitor the transportation network.

79. A computer-readable medium that that stores a program, the program comprising:

a. means for verifying pre-determined characteristics of a transporting entity at a transfer station, a positive verification providing the transporting entity access to pick-up at the transfer station;

b. means for recording pre-determined transfer station transaction data;

c. means for verifying pre-determined characteristics of the transporting entity and certain pre-determined transfer station transaction data at a landfill, a positive verification providing the transporting entity access to deliver at the landfill;

d. means for recording pre-determined landfill transaction data; and

e. means for evaluating the transfer station transaction data with the landfill transaction data creating statistics used to manage and monitor waste transporting.

80. A computer-readable medium that that stores a program, the program comprising:

a. means for verifying pre-determined characteristics of a hauler, driver and trailer at a transfer station, a positive verification providing the driver access to waste pick-up at the transfer station;

b. means for recording pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up;

c. means for verifying pre-determined characteristics of the hauler, driver, trailer, and certain pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up, at a landfill, a positive verification providing the driver access to deliver waste to the landfill;

d. means for recording pre-determined landfill transaction data, including date and time of delivery, and weight gain during delivery; and

e. means for evaluating the transfer station transaction data with the landfill transaction data creating statistics used to manage and monitor waste transporting.

81. A computer-readable medium that that stores a program, the program comprising:

a. means for verifying pre-determined characteristics of a hauler, driver and trailer at a transfer station, a positive verification providing the driver access to waste pick-up at the transfer station;

b. means for recording pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up;

c. means for verifying pre-determined characteristics of the hauler, driver, trailer, and certain pre-determined transfer station transaction data, including weight, destination identification, and date and time of waste pick-up, at a landfill, a positive verification providing the driver access to deliver waste to the landfill;

d. means for recording pre-determined landfill transaction data, including date and time of delivery, and weight gain during delivery; and

e. means for evaluating the transfer station transaction data with the landfill transaction data creating statistics, including exception reports, used to manage and monitor waste transporting.